

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

2520 Venture Oaks, Suite 350

Sacramento, CA 95833

(916) 274-5721

FAX (916) 274-5743

www.dir.ca.gov/oshsb



NOTICE OF PROPOSED MODIFICATION TO CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 4, Article 29, Section 1716.2 of the Construction Safety Orders

Proposed Vertical Standard – Fall Protection for Residential-Type Framing Activities

Pursuant to Government Code section 11346.8(c), the Occupational Safety and Health Standards Board (standards board) gives notice of the opportunity to submit written comments on the above-named standard in which modifications are being considered as a result of public comments and/or board staff consideration.

On November 20, 2003, the standards board held a public hearing to consider revisions to Title 8, section 1716.2, of the Construction Safety Orders. The standards board received oral and written comments on the proposed revisions. The standard has been modified as a result of these comments and board consideration.

A copy of the full text of the standard as originally proposed, and a copy of the pages with the modifications clearly indicated, are attached for your information. In addition, a summary of all oral and written comments regarding the original proposal and staff responses is included.

Pursuant to Government Code section 11346.8(d), notice is also given of the opportunity to submit comments concerning the addition to the rulemaking file of the following documents relied upon:

1. Fall protection injury and fatality statistics provided by Bob Raymer, Technical Director/ Senior Advocate, representing California Building Industry Association (CBIA), as follows:

- (1) Bar chart: California Fatalities – BLS, 1995-2000, for various construction trades, prepared by the CBIA.
- (2) A report prepared by the National Association of Home Builders, Construction Safety and Health Committee, undated. (Estimated date of publication, early 2001).
- (3) Tabulation of Roofing Industry Violations, for SIC 1761 (Roofing), July 1, 1990 through Dec 31, 1994, with supporting Federal OSHA Roofing Industry Accident Inspection Reports taken from a search of the Federal Information Management Information System (IMIS), July 1, 1990 through Dec 31, 1994.
- (4) California Census of Fatal Occupational Injuries, 1993, prepared by Department of Industrial Relations, Division of Labor Statistics and Research, October 1994.

2. Occupational Health Branch Study: “Results of literature review: Falls from Elevation in Construction” performed by Ms. Florence Reinisch, M.P.H., Research Scientist II, California Department of Health Services, Occupational Health Branch, received January 28, 2004, with revision dated February 5, 2004, including nine referenced attachments.

Copies of these documents are available for review during normal business hours at the standards board office located at the address listed below.

Any written comments on these modifications or documents relied upon must be received by 5:00 p.m. on April 14, 2004, at the Occupational Safety and Health Standards Board, 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833. The standards will be scheduled for adoption at a future business meeting of the standards board.

The standards board’s rulemaking files on the proposed action are open to public inspection Monday through Friday, from 8:00 a.m. to 4:30 p.m., at the standards board’s office at 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833.

Inquiries concerning the proposed changes may be directed to Keith Umemoto, executive officer at (916) 274-5721.

OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD

Date: March 26, 2004

Keith Umemoto, executive officer

STANDARDS AS ORIGINALLY PROPOSED

**STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

**PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4**

Amend CSO Article 29 (Erection and Construction), section 1716.2 to read:

§1716.2. Wood and Light Gage Steel Frame Construction, Residential/Light Commercial.

(a) Scope and Application.

This section applies to work directly associated with the framing of new buildings or structures using the operations, methods, and procedures associated with residential-type framing activities, i.e., joists or trusses resting on stud walls.

(b) Definitions.

- (1) Bottom Plate. The bottom horizontal member of a frame wall. Sometimes called the “sole plate.”
- (2) Eaves. The lowest edge of a sloped roof.
- (3) Fascia Board. The exterior trim board at the perimeter of the roof.
- (4) Joist. One of a series of parallel beams used to create a structural support system for a floor deck or flat roof, onto which sheathing is fastened.
- (5) Nominal Size. For purposes of this section, the commercial size designation of a standard width and depth of standard sawn lumber and glue laminated lumber grades; larger than the standard actual net size of the finished, dressed lumber. An approximate rough-cut dimension assigned to a piece of material as a convenience in referencing to the piece, such as “2 x 4”.
- (6) Rafter. One of a series of structural members of a roof designed to support roof loads. A framing member that runs up and down the slope of a pitched roof. The beams that slope from the ridge of a roof to the eaves and make-up the main body of the roof’s framework. The rafters of a flat roof are sometimes called roof joists.
- (7) Residential-type Framing Activities. For the purposes of this section, residential-type framing activities include: installation of floor joists, floor sheathing, layout and installation of walls, hanging and nailing of shear panels, setting and bracing roof trusses and rafters, installation of starter board, roof sheathing, and fascia board; installation of windows, siding and exterior trim.
- (8) Roof Slope. For the purposes of this section, the incline angle of a roof surface, given as a ratio of the vertical rise to the horizontal run. A 7:12 roof has 7 feet of vertical rise for 12 feet of horizontal run.
- (9) Sheathing. The structural panel covering fastened onto studs, floor joists, and/or rafters/trusses.
- (10) Slide Guards. A 2-inch nominal cleat, on centers not to exceed 4 feet, securely fastened to the roof sheathing to provide footing on a sloped roof.
- (11) Starter Board. The board-type sheathing material installed at eaves and gable ends in the plane of the sheathing and visible from the underside.
- (12) Stud. A vertical framing member in walls and partitions, also referred to as a wall stud, attached to the horizontal sole plate below and the top plate above.
- (13) Top Plate. Top horizontal member of a frame wall supporting ceiling joists, rafters, or other structural members.

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- (14) Truss. Prefabricated structural roof unit consisting of triangular bracing (truss webs) between the ceiling joist (bottom chord) and the roof rafter (top chord) commonly installed parallel with other trusses to create a structural support system for a roof after which sheathing is fastened. The bottom chord often serves as a ceiling joist. Each member is usually subjected to longitudinal stress only, either tension or compression.
- (15) Truss Support Plate. A temporary support structure erected near mid-span of an area with a large open span, such as a garage, to support trusses during installation.
- (c) Raising Walls.
- (1) ~~(a)~~ Before manually raising wood framed walls that are 40 15 feet or more in height, temporary restraints such as cleats on the foundation/floor system or straps on the wall bottom plate shall be installed to prevent inadvertent horizontal sliding or uplift of the wood framed wall bottom plate.
- (2) ~~(b)~~ Anchor bolts alone shall not be used for blocking or bracing the wood framed wall being raised when raising framed walls 15 feet or more in height.
- (d) Stabilization of Structures.
- Employees shall not work from or walk on top plates, joists, rafters, trusses, beams or other structural members until they are braced, supported or secured.
- (e) Work on Top Plate and Roof Structure Framing.
- (1) When employees are walking/working on top plates, joists, rafters, trusses, beams or other similar structural members over 15 feet above the surrounding grade or floor level below, fall protection shall be provided by scaffolding, guardrails, a personal fall protection system, or by other means prescribed by Article 24, Fall Protection.
- EXCEPTION: When employees are walking/working on securely braced rafters or roof trusses on center spacing not exceeding 24 inches, and more than 6 feet from an unprotected side or edge, they shall be considered protected from falls between the rafters or roof trusses.
- (2) Truss Support Plate. Where a truss support plate is used during the installation of trusses, it shall be constructed of a 2x6 plank laid flat, secured lineally to a 2x6 plank laid on edge, supported with 2x4 wood members (legs) spaced no more than 6 feet on center and attached to diagonal bracing adequately secured to support its intended load. All material dimensions are minimum and nominal.
- (f) Work on Floor Joists.
- (1) When installing floor joists, employees shall be considered protected from falls up to and including 15 feet above the surrounding grade or floor level below when standing on or working from joists laid on their sides on the top plate on center spacing not exceeding 24 inches when walking/working within 24 inches of the top plate or other structural support.
- (2) Employees shall be considered protected from falls between installed floor joists on center spacing not exceeding 24 inches when more than 6 feet from an unprotected side or edge.

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- (3) When working within 6 feet of the building perimeter or other unprotected sides or edges over 15 feet above the surrounding grade or floor level below, employees shall be protected from falls as prescribed in subsection (e)(1).
- (g) Work on Floors and Other Walking/Working Surfaces. When working on floors and other walking/working surfaces that will later be enclosed by framed exterior walls, employees directly involved with the layout and construction of framed stud walls shall be protected from falling by standard guardrails as specified in Section 1620 around all unprotected sides or edges, or by other means prescribed by Article 24, Fall Protection, when the floor or walking/working surface is over 15 feet above the surrounding grade or floor level below.
- (h) Work on Starter Board, Roof Sheathing and Fascia Board.
- (1) When installing starter board, roof sheathing, and fascia board, employees shall be protected from falling by scaffolding, guardrails, personal fall protection systems, or other means prescribed by Article 24, Fall Protection as follows:
- (A) For structures greater than one story in height where the fall height exceeds 15 feet above the surrounding grade or floor level below, or
- (B) When working on roofs sloped greater than 7:12.
- EXCEPTION to (h)(1)(B): For roofs sloped up to 12:12, slide guards may be used as fall protection up to and including 15 feet as measured from the eaves to the surrounding grade or floor level below.
- (2) Employees working inside the gable end truss or rafter shall be considered protected from falls where the gable end truss has been installed and braced to withstand a lateral force of 200 pounds and the employee installs fascia or starter board working from within the gable end truss or rafter.
- (3) When work must be performed outside the gable end truss or rafter, the employee shall be protected from falling by scaffolding, or a personal fall protection system, or other means prescribed by Article 24.
- EXCEPTION to (h)(3): When the work is of short duration and limited exposure and the hazards involved in rigging and installing the safety devices required equal or exceed the hazards involved in the actual construction, these provisions may be temporarily suspended provided the work is performed by a qualified person.
- (i) Installation of Windows. Window openings shall be guarded as required by Section 1632. The guardrail may be removed immediately prior to the installation of the window components if removal of the guardrail is necessary to install the window(s).
- (j) Scaffolding.
- (1) Where scaffolding is used, it shall be constructed in accordance with all applicable requirements of Articles 21 and 22 (Scaffolds).

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(2) Where scaffolds are installed parallel and adjacent to framed structure walls, the interior railing may be omitted for installing joists, rafters or trusses if the scaffold platform is 15 feet or less from the interior floor level below and the top plate is higher than the adjacent work platform.

(3) When a scaffold is used as an edge protection platform:

(A) The platform shall not be more than 2 feet vertically below the top plate, and shall be fully planked.

1. The distance between the inboard edge of the platform and the building or structure wall shall not be more than 16 inches.
2. Guard railings shall extend not less than 42 inches vertically above the eaves if the outboard edge of the platform extends less than 12 inches horizontally beyond the eaves.

(B) Where a metal frame scaffold is used as an edge protection platform:

3. A 2"x 6" or larger toeboard shall be secured on edge parallel to the outer rail.
4. Scaffolds shall be secured in tension and compression to the structure at or near the top of the scaffold at each end and at every other frame not to exceed 20-foot intervals.
5. The outboard edge of the platform shall extend not less than 24 inches horizontally beyond the eaves.

(k) Training:

Employees who may be exposed to fall hazards shall be trained in accordance with the requirements of Sections 1509 and 3203 to recognize fall hazards associated with the erection and construction activities they will be performing and shall be trained in the procedures to be followed in order to minimize these hazards. Such training shall be documented in accordance with Sections 1509 and 3203.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

PROPOSED MODIFICATIONS
(Modifications are indicated in bold,
double underline wording for new language,
and bold, strikeout for deleted language.)

(Only modified pages are included.)

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- (13) Top Plate. Top horizontal member of a frame wall supporting ceiling joists, rafters, or other structural members.
- (14) Truss. Prefabricated structural roof unit consisting of triangular bracing (truss webs) between the ceiling joist (bottom chord) and the roof rafter (top chord) commonly installed parallel with other trusses to create a structural support system for a roof after which sheathing is fastened. The bottom chord often serves as a ceiling joist. Each member is usually subjected to longitudinal stress only, either tension or compression.
- (15) Truss Support Plate. A temporary support structure erected near mid-span of an area with a large open span, such as a garage, to support trusses during installation.
- (c) Raising Walls.
- (1) ~~(a)~~ Before manually raising ~~wood~~ framed walls that are ~~10~~ 15 feet or more in height, temporary restraints such as cleats on the foundation/floor system or straps on the wall bottom plate shall be installed to prevent inadvertent horizontal sliding or uplift of the ~~wood~~ framed wall bottom plate.
- (2) ~~(b)~~ Anchor bolts alone shall not be used for blocking or bracing ~~the wood framed wall being raised~~ when raising framed walls 15 feet or more in height.
- (d) Stabilization of Structures.
Employees shall not work from or walk on top plates, joists, rafters, trusses, beams or other structural members until they are **securely** braced, **and** supported ~~or secured~~.
- (e) Work on Top Plate and Roof Structure Framing.
- (1) When employees are walking/working on top plates, joists, rafters, trusses, beams or other similar structural members over 15 feet above the surrounding grade or floor level below, fall protection shall be provided by scaffolding, guardrails, a personal fall protection system, or by other means prescribed by Article 24, Fall Protection.
EXCEPTION: When employees are walking/working on securely braced rafters or roof trusses on center spacing not exceeding 24 inches, and more than 6 feet from an unprotected side or edge, they shall be considered protected from falls between the rafters or roof trusses.
- (2) Truss Support Plate. Where a truss support plate is used during the installation of trusses, it shall be constructed of a 2x6 plank laid flat, secured lineally to a 2x6 plank laid on edge, supported with 2x4 wood members (legs) spaced no more than 6 feet on center and attached to diagonal bracing adequately secured to support its intended load. All material dimensions are minimum and nominal.
- (f) Work on Floor Joists.
- (1) When installing floor joists, employees shall be considered protected from falls up to and including 15 feet above the surrounding grade or floor level below when standing on or working from joists laid on their sides on the top plate on center spacing not exceeding 24 inches when walking/working within 24 inches of the top plate or other structural support.

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- (2) Employees shall be considered protected from falls between installed floor joists on center spacing not exceeding 24 inches ~~when more than 6 feet from an unprotected side or edge.~~
- (3) When working within 6 feet of the building perimeter or other unprotected sides or edges over 15 feet above the surrounding grade or floor level below, employees shall be protected from falls as prescribed in subsection (e)(1).
- (g) Work on Floors and Other Walking/Working Surfaces. When working on floors and other walking/working surfaces that will later be enclosed by framed exterior walls, employees directly involved with the layout and construction of framed stud walls shall be protected from falling by standard guardrails as specified in Section 1620 around all unprotected sides or edges, or by other means prescribed by Article 24, Fall Protection, when the floor or walking/working surface is over 15 feet above the surrounding grade or floor level below.
- (h) Work on Starter Board, Roof Sheathing and Fascia Board.
- (1) When installing starter board, roof sheathing, and fascia board, employees shall be protected from falling by scaffolding, guardrails, personal fall protection systems, or other means prescribed by Article 24, Fall Protection as follows:
- (A) For structures greater than one story in height where the fall height exceeds 15 feet above the surrounding grade or floor level below, or
- (B) When working on roofs sloped greater than 7:12.
- EXCEPTION to (h)(1)(B): For roofs sloped up to 12:12, slide guards may be used as fall protection up to and including 15 feet as measured from the eaves to the surrounding grade or floor level below.
- (2) Employees working inside the gable end truss or rafter shall be considered protected from falls where the gable end truss has been installed and braced to withstand a lateral force of 200 pounds and the employee installs fascia or starter board working from within the gable end truss or rafter.
- (3) When work must be performed outside the gable end truss or rafter, the employee shall be protected from falling by scaffolding, or a personal fall protection system, or other means prescribed by Article 24.
- EXCEPTION to (h)(3): When the work is of short duration and limited exposure and the hazards involved in rigging and installing the safety devices required equal or exceed the hazards involved in the actual construction, these provisions may be temporarily suspended provided the work is performed by a qualified person.
- (i) Installation of Windows. Window openings shall be guarded as required by Section 1632. The guardrail may be removed immediately prior to the installation of the window components if removal of the guardrail is necessary to install the window(s).
- (j) Scaffolding.
- (1) Where scaffolding is used, it shall be constructed in accordance with all applicable requirements of Articles 21 and 22 (Scaffolds).

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- (2) Where scaffolds are installed parallel and adjacent to framed structure walls, the interior railing may be omitted for installing joists, rafters or trusses if the scaffold platform is 15 feet or less from the interior floor level below and the top plate is higher than the adjacent work platform.
- (3) When a scaffold is used as an edge protection platform:
- (A) The platform shall not be more than 2 feet vertically below the top plate, and shall be fully planked.
- (B) ~~1.~~ The distance between the inboard edge of the platform and the building or structure wall shall not be more than 16 inches.
- ~~2. Guard railings shall extend not less than 42 inches vertically above the eaves if the outboard edge of the platform extends less than 12 inches horizontally beyond the eaves.~~
- (4) ~~(B)~~ Additional provisions Where a metal frame scaffold is used as an edge protection platform:
- (A) ~~3.~~ A 2"x 6" or larger toeboard shall be secured on edge parallel to the outer rail.
- (B) ~~4.~~ Scaffolds shall be secured in tension and compression to the structure at or near the top of the scaffold at each end and at every other frame not to exceed 20-foot intervals.
- (C) ~~Guard railings shall extend not less than 42 inches vertically above the eaves if the outboard edge of the platform extends less than 12 inches horizontally beyond the eaves.~~
- ~~5. The outboard edge of the platform shall extend not less than 24 inches horizontally beyond the eaves.~~
- (k) Training:
- Employees ~~who may be~~ exposed to fall hazards shall be trained in accordance with the requirements of Sections 1509 and 3203 to recognize fall hazards associated with the erection and construction activities they will be performing and shall be trained in the procedures to be followed in order to minimize these hazards. Such training shall be documented in accordance with Sections 1509 and 3203.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

SUMMARY AND RESPONSE TO COMMENTS

SUMMARY AND RESPONSE TO WRITTEN AND ORAL COMMENTS

I. Written Comments

The following individuals, involved in the residential framing industry, submitted letters of support of the proposed standard. Since the letters were substantially similar in nature, the comments are summarized below:

<u>Commenter:</u>	<u>Representing:</u>	<u>Letter dated:</u>
Ben C. Anderson, president	BCA Development, Inc.	November 14, 2003
Dennis G. Bennett, president	Bennett Development, Inc.	October 16, 2003
Norm Boden, owner	Norm Boden Construction	November 14, 2003
Ronald V. Buck, vice president of operations	Standard Pacific Homes	November 10, 2003
Leroy A. Christophersen, safety & human resources mgr.	Bolin Custom Builders, Inc.	October 20, 2003
James Colafrancesco, president	Colafrancesco Framing, Inc.	November 12, 2003
Wilfred N. Cooper, Sr., chairman of the board	WNC & Associates, Inc.	November 20, 2003
Patrick Costanzo, Jr., executive vice president	Greenbriar Homes Communities, Inc.	October 27, 2003
Stephen P. Doyle, president	Brookfield Homes	October 17, 2003
Jeff Hayes, secretary/treasurer	Timber Ridge Framing Inc.	October 24, 2003
Jeff Panasiti, vice president – operations	Renaissance Homes	October 17, 2003
Dennis J. Razzari, vice president	Davidon Homes	October 27, 2003
Todd Speece, vice president operations	Winncrest Homes	October 20, 2003
E.J. “Tim” Timmreck, workplace compliance director	KB Home	October 20, 2003
John R. Young	Young Homes	November 19, 2003

Comment:

The aforementioned commenters expressed strong support for the proposed rulemaking. These individuals represent businesses that have been involved in the construction of a combined total of over 100,000 dwelling units in California and collectively represent businesses with over 370 years in the residential construction industry. They noted that the proposal is the result of over a year’s effort by a large and diverse coalition of representatives from industry, trade associations, unions, manufacturers, and the Division of Occupational Safety and Health (division). They commented that the existing standards are out-of-date and fail to account for major changes that have taken place within the residential construction industry over the past 20 years. Specifically, most residential construction in California today involves high-density, phased projects; and that if the existing standards are strictly applied, they can potentially create hazardous working situations. They stated that the proposal is more comprehensive and understandable than the present standards and would vastly improve compliance in

the field, which would improve jobsite safety. They are also of the opinion the proposed standards are highly likely to reduce compliance costs.

Although acknowledging that some minor modifications to the proposal may be needed as the regulatory process proceeds, the writers expressed strong support for adoption of the proposal as soon as possible.

Response:

Minor modifications to the proposal have been made in response to suggestions received from other commenters in the framing industry (see the following group of comments). The board thanks the foregoing individuals for their participation in the rulemaking process.

The following individuals, involved in the residential framing industry, submitted letters of support of the proposed standard, with recommended consensus modifications developed by a consortium of individuals and businesses in the residential framing industry. Since the letters were substantially similar in nature, their comments are summarized below:

<u>Commenter:</u>	<u>Representing:</u>	<u>Letter dated:</u>
Jim Albano	South Coast Framers	November 12, 2003
Joseph Bunker, president	B&B Framing Inc.	November 17, 2003
Beth Curran, executive director	Professional Association of Specialty Contractor (PASC), Orange County/Inland Empire	November 11, 2003
Dennis Delucio & Ray Wakeham	RND Construction, Inc.	November 12, 2003
Bill Dickinson & Kevin Bland, Esq.	California Framing Contractors Association	November 12, 2003
Brad Diede, executive vice president	PASC of Northern California	November 11, 2003
Kim Fromer	Fromer, Inc.	November 14, 2003
Richard Kimball	Quality Structures, Inc.	November 19, 2003
Rockwell D. King, president	King Construction, Inc.	November 13, 2003
Ronald E. Laurence, president	Laurence-Hovenier, Inc.	November 14, 2003
Tom Lewis, Board president	California PASC	November 12, 2003
Frank Mercier	Lucas & Mercier Construction	November 14, 2003
Greg Minor, president/CEO	Greg Minor Construction Inc.	November, 11, 2003
Delane Rhodes & Mike Hazen	Framers Council, PASC of Northern California	November 13, 2003
Daniel F. Schaldach, president	D&S Construction Co.	November 12, 2003
Daniel F. Schaldach, secretary/treasurer	ABC Framers Council	November 12, 2003
Robert R. Thomas, president	HnR Framing Systems, Inc.	November 12, 2003
Bret Vedder, executive vice president	PASC, San Diego County	November 12, 2003
John Volkman, general manager	KBI Norcal	November 12, 2003

Darin Wallace, loss control
manager
Bruce Wick

Production Framing Systems,
Inc.
Wick Risk Management

November 11, 2003
November 14, 2003

The foregoing individuals stated they are residential framing contractors and associations writing in support of the proposed residential framing standard. The collective number of carpenters employed by the individual contractors is difficult to quantify due to the transient nature of employment and seasonal factors; however, the commenters stated they employ over 5,600 carpenters engaged in residential framing activities and the associations represent contractors employing upwards of 25,000 carpenters engaged in residential framing activities statewide. These individuals stated that the residential framing industry is in dire need of clarity and an effective fall protection standard and expressed support for the proposal. However, these commenters recommended incorporation of "Framing Industry Consensus Amendments" which were attached or referred to by each commenter. The "Framing Industry Consensus Amendments" are contained in the following comments:

Comment No. 1:

The commenters recommended deleting the last clause of (f)(2) following "24 inches," because, in their opinion, it conflicts with (f)(3) which already identifies fall protection when working within the 6-foot danger zone.

Response:

The board agrees the 6-foot zone is duplicated in (f)(2) and (f)(3) and therefore accepts this recommended modification for (f)(2).

Comment No. 2:

The commenters recommended deleting subsection (j)(3)(B)(5) because it would conflict with their proposed reformatting of subsection (j) to be discussed below.

Response:

Existing subsection (j)(3)(B)(5) if left unchanged, would conflict with other changes proposed by the reformatting in that it prescribes a minimum 24 inch platform width; whereas proposed reformatting would prescribe special guardrails for widths less than 12 inches. Since the board proposes to accept, in large part, the proposed reformatting, the board agrees with this comment.

Comment No. 3:

The commenters recommended reformatting subsection (j)(3) into two subsections (j)(3) and (j)(4) to distinguish between provisions applicable for all types of scaffolding when used as an edge protection platform and additional provisions necessary for metal frame (stacking) scaffolds when used as an edge protection platform.

Response:

The board agrees that the reformatting of subsection (j)(3) into two subsections would clarify distinctions between requirements applicable to all scaffolds when used for edge protection and

additional specific provisions applicable to metal frame scaffolds when they are to be employed as a means of edge protection. The board therefore accepts this comment.

Comment No. 4:

Subsection (j)(3)(C) should be moved to and become new subsection (j)(4)(C) because it conflicts with the scaffold standards applicable to all scaffolding that requires guardrails above 7-1/2 feet. The commenters believe this suggested relocation would eliminate this conflict by only applying to metal framed scaffolds when they are used as an edge protection platform.

Response:

The subsection in question reads:

“Guard railings shall extend not less than 42 inches vertically above the eaves if the outboard edge of the platform extends less than 12 inches horizontally beyond the eaves.”

In response to this comment, board staff reviewed the discussion on edge protection platforms in the advisory committee minutes. Staff also discussed the proposed modification with framing industry representatives and with the division. Bracket scaffolds, by virtue of their design, serve as satisfactory edge protection platforms; however, additional conditions in subsection (j)(4) are necessary to adapt a metal frame scaffold to effectively function as an edge protection platform. Guardrails are already prescribed for scaffolds by section 1621 for elevations at or above 7-1/2 feet; however, due to differences in construction and installation of metal frame and bracket scaffolds, board agrees that additional clarification of guardrail provisions is necessary for metal frame scaffolds when used as an edge protection platform. The board therefore proposes to relocate this requirement to subsection (j)(4).

Comment No. 5:

The commenters recommended adding an exception to subsection (j)(4) as follows:

“Exception: Section (j)(4) shall not apply to bracket-type scaffolds.”

The commenters’ purpose is to clarify that the newly formatted subsection (j)(4) would only apply to metal framed scaffolds.

Response:

The board agrees with the commenters that clarification of the scope of new subsection (j)(4) is necessary; however, rather than by exception, board proposes to address the commenters’ concern by clarifying the heading of (j)(4) as follows:

“Additional provisions where a metal frame scaffold is used as an edge protection platform.”

The board therefore agrees with the comment to the extent that a clarification of the subject matter of subsection (j)(4) is proposed.

Comment No. 6:

The commenters requested clarification of subsection (k) by deleting “who may be” from the proposed text.

Response:

The board concurs with the comment that “who may be” in subsection (k) creates ambiguity and therefore accepts the recommendation to delete this clause.

The board thanks the foregoing listed individuals for their constructive comments and for their participation in the rulemaking process.

J. Kent Dagg, executive director, Shasta Builders’ Exchange, by letter dated November 3, 2003.

Comment No. 1:

Mr. Dagg stated that the Builders’ Exchange is an international contractors’ organization providing a variety of services to local contractors. The Shasta Builders’ Exchange represents approximately 800 contractors in the northernmost region of California. He stated that residential construction “sweeps” conducted by Cal/OSHA enforcement have created a hardship for contractors and that his organization had been preparing to petition the board for changes to the standards when they became aware of the CBIA petition to develop industry-specific fall protection standards for residential-type framing activities. He expressed his organization’s support for the proposed standard.

Response:

The board thanks Mr. Dagg and the Shasta Builders’ Exchange for their support for the proposed standard.

Comment No. 2:

He believes the current standards provide for the use of a fall protection plan; however, he cited interpretive differences with the division regarding when a fall protection plan may be used. He therefore stated hope that the proposed industry-specific standards would be less subject to differences in interpretation.

Response:

Provisions for use of a fall protection plan remain unchanged within section 1671.1, which is outside the scope of this rulemaking. Section 1671.1 permits the use of a fall protection plan when it can be shown that the use of conventional fall protection is impractical or creates a greater hazard. The board believes that by developing and proposing safe work practices for specific residential-type framing tasks, the proposed standard does much to reduce or eliminate the potential for interpretive differences and will help clarify instances where the use of conventional fall protection may be impractical or may create a greater hazard. The proposal also provides for the use of alternative means of fall protection including the use of a fall protection plan (“other means prescribed by Article 24”) in the following proposed subsections:

- “(e) Work on Top Plate and Roof Structure Framing.
- (g) Work on Floors and Other Walking/Working Surfaces.
- (h) Work on Starter Board, Roof Sheathing and Fascia Board.”

The board believes the proposed vertical standard addresses the commenter's concerns and that further modification of the proposal is unnecessary.

Comment No. 3:

Mr. Dagg noted that existing standards (section 1669) establish a 15-foot trigger height for work performed on a 4-inch nominal width structural member, and expressed support for the proposed uniform 15-foot trigger height for greater continuity among related construction trades.

Response:

The board thanks Mr. Dagg and the Shasta Builders' Exchange for their support for the proposed uniform 15-foot trigger height as a means to improve compliance by establishing a common trigger height for all trades working on a residential-type framing worksite.

Comment No. 4:

The Shasta Builders' Exchange is of the opinion that the use of conventional means of fall protection can often be more hazardous, confusing, and cost prohibitive for the specific activities and exposures present during residential-type construction than using alternative means of fall protection. Therefore, they favor allowing for greater use of alternative means of fall protection which Mr. Dagg feels can be more effective, efficient, and safe to control fall exposures above the 15-foot trigger height. He described alternative means to include controlled access zones, warning line systems, and safety monitoring systems.

Response:

Although the proposal, which is based on advisory committee consensus, seeks to prescribe safe work practices using conventional means to the greatest degree possible, the advisory committee recognized and the board concurs that there will still be instances where conventional means are infeasible. The provision is therefore made for alternate means, including the use of a fall protection plan, controlled access zones and safety monitoring systems, as described in the response to comment no. 2 above.

The board thanks Mr. Dagg and the Shasta Builders' Exchange for their comments and participation in the rulemaking process.

The following individuals, representing building contractors' organizations as indicated, submitted letters in support of the proposed standard; however, they requested additional modifications as outlined below. Since both letters were very similar in nature, their comments are summarized below:

<u>Commenter:</u>	<u>Representing:</u>	<u>Letter dated:</u>
Connie Dolan, executive director	El Dorado Builders' Exchange	November 10, 2003
Gwen Miller, executive director	Salinas Valley Builders Exchange	November 12, 2003

Builders' Exchanges are an international contractors' organization. Each exchange provides a variety of services to local contractors within their region. Ms. Dolan stated that the El Dorado Builders' Exchange represents approximately 325 contractors in the eastern Sacramento Valley Region. Ms. Miller stated that the Salinas Valley Builders Exchange represents over 500 construction industry-related businesses in their tri-county area.

Comment No. 1:

The commenters stated that residential construction "sweeps" conducted by Cal/OSHA enforcement have created a hardship for their contractors due to the lack of clarity in existing standards. Each expressed their organization's support for the proposed standard.

Response:

The board believes the proposal clarifies requirements and will thus reduce interpretive differences.

Comment No. 2:

The commenters are of the opinion that the current standards provide for the use of a fall protection plan; however, there have been interpretive differences with the division. They therefore stated their hope that the proposed industry-specific standards will be subject to less interpretation.

Response:

This comment is substantially similar to Mr. Dagg's comment no. 2 above, and the reader is directed to the response to that comment.

Comment No. 3:

In view of interpretive difficulties the commenters' members have experienced in attempting to employ fall protection plans, they do not believe the proposal adequately addresses the application of fall protection plans. They request more clarity in the allowable use of fall protection plans.

Response:

Many members of the advisory committee had similar concerns and this issue was discussed. The consensus was that it is not possible to describe specific conditions where alternative means could be employed as this would be prescriptive, potentially inflexible and might not allow for future developments. Due to the wide range of conditions that can occur in the field, the consensus of the committee was to clarify to the greatest extent possible where conventional means could be employed, yet leave open the option for alternative means where conventional means are infeasible. See response to Mr. Dagg's comment no. 2 above for additional information. The board, therefore, believes the proposal adequately addresses this comment and does not believe further clarification is necessary or even possible.

Comment No. 4:

The commenters stated that they fully support the proposed 15-foot trigger height for residential-type framing activities; however, they would like to see the proposal provide better guidance for "non-leading edge" types of activities such as skylight installation, HVAC installation and chimney installation. They would also like to see maintenance activities for these applications addressed.

Response:

The scope of the petition was limited to residential-type framing activities. The petitioners' requests are outside the scope of this rulemaking; however, they are welcome to petition the board for a separate rulemaking to address these concerns.

The board thanks the El Dorado and Salinas Valley Builders' Exchanges for their participation in the rulemaking process.

Bill Drury, training officer, Carpenters Training Committee for Northern California, by e-mail dated November 18, 2003.

Comment No. 1:

Subsection (d) should include language to require complete stabilization to the point of rigidity, or a prescriptive formula as in subsection (e)(2) to prevent work from unstable footholds.

Response:

The requirement for bracing is similar to that found in section 1709, which also applies. However, the board accepts this comment and proposes to clarify subsection (d) by modifying it to read as follows (modifications indicated by bold, underlined and strikethrough text):

“Employees shall not work from or walk on top plates, joists, rafters, trusses, beams or other structural members until they are securely braced and supported ~~or secured~~. ”

Comment No. 2:

Mr. Drury stated that, in their opinion, allowing workers to work from framing members at a trigger height of 15 feet amounts to an acceptance of falls and injuries. He requested the trigger height to be set at 7-1/2 feet consistent with section 1670.

Response:

The commenter assumes that falls are inevitable, and thus asks the board to reduce fall height to reduce fall injury severity. However, fall injuries can occur even on the same level. Trigger height is a predictor of fall injury severity; however, it is not a pure predictor of fall risk. This proposal focuses on reducing fall risk.

Fall risk predictors are:

- Compliance: Employer's ability to locate and identify applicable fall protection requirements and willingness to comply.
- Enforcement: Level of ongoing enforcement of applicable fall protection/safety standards.
- Effectiveness of employer's safety program.
 - Employees' compliance with safe work procedures established by employer.
 - Employer's due diligence in administering a disciplinary policy to punish employees who fail to follow safe work practices.
- Attitude:
 - Does employer promote and foster an atmosphere of safety?
 - Do employees practice safe work practices?
- Training: Level of employee training.
- Experience: Level of employee skills and experience.
- Physical condition of employee: Includes age, health and fitness.
- Physical condition of the jobsite: hazards present.
- The nature of the task.
- Environmental conditions: weather, configuration of the structure.

Furthermore, the following were considered:

- Available methods of hazard control/correction.
- Standards must be consistent and understandable to employees, employers, and compliance officers.

The board is of the opinion that worker safety cannot be satisfactorily addressed by focusing solely on trigger height and that it is necessary for the proposal to comprehensively address worker safety by identifying work practices to reduce fall risk. The board believes the aforementioned fall risk predictors have been considered and addressed in the proposal.

Fifteen feet is currently the trigger height established in section 1669 for work on thrustouts or similar locations, such as trusses, beams, purlins, or plates of 4-inch nominal width, or greater, and in section 1637(a) for work of short duration. One of the goals of this rulemaking is to eliminate confusion caused by inconsistent trigger heights affecting residential framing activities.

The consensus of the advisory committee was that a single, uniform trigger height would eliminate confusion, thus improving compliance and providing more consistent enforcement. The 15-foot trigger height of section 1669 has been reviewed by federal OSHA and has been the standard in California for many years, and the consensus was to clarify that this trigger height applies to all residential framing activities. The committee also saw the 15-foot trigger height as a user-friendly method of differentiating between fall protection requirements for single story and multi-story residential construction.

Additional discussion of the 15-foot trigger height issue may be found under “Oral Comments,” below.

Comment No. 3:

Mr. Drury commented that they appreciate the efforts of the advisory committee to simplify the fall protection standard and that the proposed standard is easier to understand. He also commented that the proposal recognizes work practices that have existed in the frame construction industry over the years.

Response:

The board thanks Mr. Drury for his participation in the rulemaking process.

II. Oral Comments

Oral comments received at the November 20, 2003, public hearing in San Diego, California.

Bob Raymer, technical director/senior advocate, representing California Building Industry Association (CBIA).

Comment:

Mr. Raymer expressed support for the proposal and for the 15-foot trigger height. He commented that the 15-foot trigger height is a long-standing provision in the framing industry that has been accepted by federal OSHA. Any changes to the trigger height could reopen an issue that has been settled. He concluded by stating that, due to enforcement problems with the existing standards, it is important to move ahead with the proposed rulemaking.

Response:

The board thanks Mr. Raymer and the CBIA for their participation in the board's rulemaking process.
Robert Harrison, M.D., board member.

Board member Harrison had several questions and comments regarding the proposed trigger height that he directed to various members of the public during their testimony. For the sake of brevity, Board member Harrison's questions and comments regarding trigger height and scientific data are consolidated as follows:

Comment No. 1:

Board member Harrison asked Mr. Raymer whether data are available on the risks of falling and injuries at different heights.

Response:

Mr. Raymer responded that the CBIA had collected data, but that it was inconclusive. He offered to and subsequently provided board staff with that information on November 21, 2003, as follows:

- (1) Bar chart: California Fatalities – BLS, 1995-2000, for various construction trades, prepared by the CBIA.
- (2) A report prepared by the National Association of Home Builders, Construction Safety and Health Committee, undated. (Estimated date of publication, early 2001.)
- (3) Tabulation of Roofing Industry Violations, for SIC 1761 (Roofing), July 1, 1990, through Dec 31, 1994, with supporting federal OSHA Roofing Industry Accident Inspection Reports taken from a search of the federal Information Management Information System (IMIS), July 1, 1990, through Dec 31, 1994.
- (4) California Census of Fatal Occupational Injuries, 1993, prepared by DIR, Division of Labor Statistics and Research, October 1994.

The majority of this information is dated prior to December 31, 1994, and is not specific to residential framing, thus it is inconclusive. However, the information tends to indicate that there are differences in hazards related to residential vs. commercial construction and that fewer fall-related fatalities occur in residential-type construction than in commercial.

Comment No. 2:

Is there adequate scientific data to support the 15-foot trigger height?

Response:

At Board member Harrison's request, the CBIA furnished data described in response to comment no. 1 above.

Board member Harrison assisted in conducting a literature search through arrangement with the Department of Health Services, Occupational Health Branch, which subsequently provided statistical data, hereinafter referred to as the "OHB Study." The OHB study included data more recent than CBIA's, some having been gathered between 2000-2003. The OHB study also provided more detailed data than have been available in the past; however, they are primarily focused on the relationship between injury severity and fall height. The board is of the opinion that although fall height is a predictor of fall injury severity, other factors need to be considered as well, such as physical limitations

of fall protection systems, exposure of employees when setting-up conventional fall protection such as guardrails, nets, etc., particularly for work of short duration (See response to written comment no. 2 from Mr. Bill Drury for further discussion). Although the impact of fall protection on productivity may not directly relate to safety, it is certainly a factor that must be considered from a cost/fiscal impact standpoint in achieving the state's goal of providing more affordable housing.

The advisory committee therefore chose to approach the problem by focusing comprehensively on reducing fall risk, while taking into consideration potential injury severity. Thus, the proposed 15-foot trigger is tightly integrated with other portions of the rulemaking, and committee members have indicated that any attempt to modify the trigger height would most likely dissolve the entire consensus.

For additional discussion of this subject, the reader is directed to the response to Mr. Drury's written comment no. 2.

The board is therefore of the opinion that the trigger height cannot be established based solely on scientific data and that other factors must be considered as well.

Comment No. 3:

Board member Harrison asked how the proposal would ensure the safety of a worker walking on the top plate without the use of fall protection.

Response:

Walking the top plate is already permitted at up to 15 feet elevation by section 1669(a) and (c) and changes to section 1669 are outside the scope of this rulemaking. However, in the interest of providing a vertical standard for residential-type framing, section 1716.2(e) would clarify fall protection options available for work above the 15-foot trigger height.

The rulemaking proposal takes into consideration physical constraints of personal fall arrest systems. For example, section 1670(b)(11) requires personal fall protection to be rigged to limit free fall to no more than 4 feet and limits deceleration distance to 3-1/2 feet. The current 7-1/2-foot trigger height was in existence prior to the establishment of the federal 6-foot trigger, and prior to the establishment of fall limit and deceleration distances, and its origins are obscure. Due to allowable freefall and deceleration distances prescribed by section 1670(b)(11), it may be possible, under ideal conditions, to limit a fall to 7-1/2 feet, with fall arrest fully engaging just as the employee contacts the surface below. However, in the real world, it is necessary to allow the employee a certain degree of mobility in order to perform productive labor. Furthermore, many workers complain about the restraint of lifelines and lanyards, including the lines becoming entangled on nearby objects, and that such restraint and entanglement can cause them to lose their balance. Some fall accidents have occurred with employees wearing fall protection harnesses, but not being tied-off, or being improperly tied-off. The board is of the opinion that in view of physical constraints of fall protection systems, the proposed 15-foot trigger height, which is the current trigger for work on a top plate, is a more practical trigger than would be any lesser height. Comment no. 4 (below) contains additional discussion of constraints on the use of fall protection in residential framing.

It should also be noted that the 15-foot trigger height will serve as a convenient means of distinguishing between one story and multi-story construction. The top plate on a one-story residence is typically at 8 to 10 feet, and the second story top plate is typically at 18 to 20 feet. Although the existing trigger height is 15 feet, in reality, employees are only walking the top plate without conventional fall protection at a height typically not exceeding 10 feet. Employees working on the top plate of residences two or more stories in height would be required to use fall protection since they would be at heights above the 15-foot trigger.

Since there is a growing trend toward smaller lots with structures two or more stories in height in order to meet demands for more affordable housing in California, the proposal would require fall protection for most residential framing. It should also be kept in mind that the timeframe when it may be necessary for the employee to walk the top plate is generally short in duration. As soon as the walls are braced and stabilized, employees almost immediately begin placing floor joists or roof structure framing, which would be covered by section 1716.2(e) and (f).

Comment No. 4:

Board member Harrison asked how the advisory committee arrived at the 15-foot trigger?

Response:

A 15-foot trigger height is currently prescribed in section 1669(a) for work performed from thrustouts or similar locations, such as trusses, beams, purlins, or plates of 4-inch nominal width or greater, where temporary guardrail protection is impracticable. A 15-foot trigger for scaffolding is also permitted for short duration residential-type framing activities by section 1637(a), exception 1, and for structural wood framing systems by section 1716.1(c).

The proposed rulemaking was initiated to address compliance and enforcement problems created by conflicting and inconsistent trigger heights for fall protection in residential-type framing work. For example, section 1670(a) prescribes personal fall protection systems for work in excess of 7-1/2 feet above the surrounding grade or floor below; however, section 1730 permits roofers to work at elevations up to 20 feet without fall protection. The existing inconsistent trigger heights are particularly confusing in residential-type framing where employees can often be subject on the same job and during the same work day to different trigger heights depending on the nature of the work performed.

In arriving at the 15-foot trigger height, the advisory committee also took into consideration the following:

- Physical limitations of fall protection systems (see response to comment no. 2 regarding free fall and fall arrest distances).
- Difficulty in finding compliant anchorage points when framing is actively under construction as employees are working on the leading edge. The anchorages that are available, are almost invariably at or below foot level which is not desirable per section 1670(b)(11)(B).
- The need for the employee to be relatively unencumbered in order to perform necessary tasks. (This is related to productivity, which can dramatically affect the availability of affordable housing.)

- Risks for employees to install and remove conventional means of fall protection such as guardrails, nets, etc., are often greater than for the employee to just quickly perform the necessary tasks using safe work practices such as those prescribed by the proposal.
- California's multiple trigger heights and restrictions on the use of fall protection plans are particularly confusing to contractors coming into the state from nearby federal plan states (which permit exceptions to the federal 6-foot trigger including unwritten fall protection plans).

The committee consensus was that federal-OSHA has already permitted the 15-foot trigger in California for many residential-type framing tasks, and that a uniform 15-foot trigger would promote safety through understandable standards and improved compliance.

Comment No. 5:

Board member Harrison asked Mr. Bob Thomas, HnR Framing, how fall injuries in single story construction can be prevented.

Mr. Thomas responded that fall injuries are effectively prevented through the use of trained and competent employees. As an example, he noted that to-date in 2003, his company had not had a single injury caused by a fall.

Response:

The board acknowledges the importance of training in promoting safety and notes that proposed subsection (k) Training, emphasizes the importance of training by supplementing general training requirements found in sections 1509 and 3203.

Comment No. 6:

Board member Harrison stated that it is essential to do further research into the risk of injuries from various fall heights and to gather statistics on fatal and non-fatal injuries at various fall heights.

Response:

See response to comment nos. 2 and 3 above.

It should also be noted that in response to this question, Mr. Foss, Division of Occupational Safety and Health, cautioned that trigger height should not be the only factor to be considered. He stated that residential fall protection is a complicated issue. He also emphasized the importance of looking at data specific for residential framing.

Comment No. 7:

Board member Harrison asked staff to compare trigger heights in other states with the proposal.

Response:

Staff has researched the fall protection trigger heights in nearby states and ascertained the following:

State	Fall protection
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California (Proposed)	Uniform 15-ft. trigger height for residential-type framing. Use of written, site-specific fall protection plan would be permitted in accordance with provisions of Article 24 [at least as effective as 29 CFR 1926.502(k)].
Arizona	Enforces federal standards (6-foot trigger) with OSHA Instruction STD3-0.1A, which allows the use of alternative methods without showing that conventional means are “infeasible,” and does not require the fall protection plan to be written nor site-specific. However, starting on or about January 1, 2004, Arizona is now requiring the fall protection plan to be in writing and site specific per 1926.502(b)(13) and 1926.502(k).
Nevada	Enforces federal standards (6-foot trigger) with OSHA Instruction STD3-0.1A, which allows the use of alternative methods without showing that conventional means are “infeasible,” and requires the fall protection plan to neither be written nor site-specific.
Oregon	Has a 10-foot trigger applicable to all construction; they make no distinction for residential. Fall height is measured from the eaves to the ground. (10 feet effectively distinguishes between one-story and multi-story construction.) Oregon essentially does not permit the use of a fall protection plan except in very limited cases where conventional means are infeasible. Oregon states that they seldom find a case where they determine conventional means to be infeasible.
Washington	Has a 10-foot trigger while work is actively taking place. The 10-foot trigger applies to all employees regardless of what they are doing (no distinction for residential). Fall height is measured from eaves to ground. Washington briefly adopted the federal 6-foot trigger in about 1994 but repealed it and went back to 10-feet due to confusion caused in the industry by inconsistent triggers. Washington requires a written fall protection plan whenever fall hazards 10 feet or more exist, and requires conventional fall protection in almost all cases above 10 feet.
Utah	Enforces federal standards (6-foot trigger) with OSHA Instruction STD3-0.1A. However, since October 26, 2001, they have required the fall protection plan to be in writing and site specific per 29 CFR 1926.502(b)(13) and 1926.502(k). Prior to October 26, 2001, Utah followed STD 3-0.1A which allows the use of alternative methods without showing that conventional means are “infeasible,” and does not require the fall protection plan to be written nor site-specific.

As can be seen above, two nearby states (Oregon and Washington) have adopted a 10-foot trigger, which essentially accomplishes the same thing as California’s proposed 15-foot trigger; i.e., distinguishes between single story and multi-story construction. Oregon and Washington make virtually no allowance for alternative means of fall protection such as controlled access zones (CAZ) and safety monitoring. The other three states surveyed recognize the impracticality of the 6-foot trigger height for residential construction and either continue to use the federal directive (STD 3-0.1A) which allows the use of alternative methods of fall protection with an unwritten fall protection plan, or if they require a written plan, they are lenient in allowing the use of alternatives to conventional fall protection above 6 feet.

Based on a comparison with other states, the board is of the opinion that these findings indicate that the federal 6-foot trigger height is impractical and unenforceable and that the proposed 15-foot trigger height is reasonable.

The board thanks Board member Harrison for his interest in the rulemaking proposal.

Jesse Navarro, board member.

Comment:

Are any data or statistics available showing fatal and non-fatal accidents throughout the state?

Response:

Statistical information on fatal and non-fatal occupational injuries and illnesses in California are available from the Division of Labor Statistics and Research, primarily in the form of accident inspection reports. In order to isolate data specific for residential framing, it is necessary to specify Standard Industrial Classifications (SIC's) such as the following:

Industry Group 152 - General Building Contractors, Residential:

Within Industry Group 152 are relevant SIC's 1521, General Contractors – Single Family Houses, and SIC 1522, General Contractors, Residential Buildings, Other than Single-Family. However, these SIC's are still broad enough to include trades that would not be affected by the proposed standard. For example, SIC 1521 includes building alterations, home improvements, mobile home repair, modular housing, prefabricated and pre-manufactured housing, remodeling, and renovations. SIC 1522 includes apartment building construction, dormitories, hotels, and motels, many of which utilize construction methods outside the scope of this proposal.

Industry Group 175 - Construction Special Trade Contractors, Carpentry and Floor Work:

Some residential-type framing work may be reported under SIC 1751, Carpentry Work. SIC 1751 includes framing; however, it also includes cabinetry, folding doors, including garage doors, ship joinery, store fixture installation, trim and finishes, and window and door installation contractors.

Thus, isolating statistical information relevant to residential framing necessitates an initial computer sort using these SIC's. Using key words in the data sort may help somewhat, but it can still include irrelevant reports, and perhaps exclude some relevant reports. It is therefore still necessary to manually go through each accident investigation report to determine its relevance to the proposal. This would involve analyses similar to those performed for the studies utilized in the OHB study, referenced in response to Board member Harrison's comment no. 2.

Although the OHB study provides useful information and enables analysis of fall injury severity as a function of fall height, it is also limited in that it includes data from many trades and construction types. The data were also taken from several states, not including California, which have different climatic conditions and may have different work procedures. Furthermore, California has historically had more stringent safety standards and more aggressive enforcement, thus making statistical comparisons with other states more difficult.

In conclusion, raw data is available showing fatal and non-fatal accidents throughout the state; however, owing to the method in which the data has been collected, it is of limited usefulness.

The board thanks Board member Navarro for his interest in the rulemaking proposal.

The following individuals gave testimony in support of the proposed standard:

Name:	Title:	Affiliation:
Bill Dickinson	president	County Line Framing
Ismael Flores	benefits coordination	ABC Framers Council
Richard Harris	president	Residential Contractors Association
Rockwell King	president	Rockwell D. King Construction, Inc.
John McCoy		Lakeview Professional Services
Steve Smiley		R&R Plastering
Marti Stroup	manager, safety, health & regulatory services	Associated General Contractors of California
Bob Thomas	president	HnR Framing

Response:

The board thanks the forenamed for their participation in the board's rulemaking process.

Bob Thomas, HnR Framing.

Comment No. 1:

Mr. Thomas commented that the existing standards have no solutions for providing adequate fall protection for workers in certain difficult framing situations; however, the proposal addresses these situations. He also expressed support for the 15-foot trigger as a general dividing line between single story and two-story construction.

Response:

The board thanks Mr. Thomas for his participation in the board's rulemaking process.

John Volkman, general manager, KBI Norcal.

Comment:

Mr. Volkman stated that he walks top plates for a living and that to require fall protection below 15 feet would expose workers to more injuries, and is impractical due to factors such as lack of adequate anchorage, distances too short for fall arrest, and potential for lanyard entanglement. He further stated that the current fall protection rules lack clarity in trigger heights and are confusing to foremen. The proposed standards prescribe a uniform trigger height which is practical and understandable.

Response:

The board thanks Mr. Volkman for his participation in the board's rulemaking process.

Jack Swain, president, Ja-Con Systems.

Comment:

Mr. Swain expressed support for the proposal and emphasized the fact that the individuals who are walking on boards at high heights specialize in this type of work and are trained for it. He asked the board to not zero in on trigger height, but to look at the proposal as a whole and how much safety it provides.

Response:

The board agrees that the proposal must be considered in-context and that all the proposed components are inter-related in providing a safe working environment.

The board thanks Mr. Swain for his participation in the board's rulemaking process.

The following individuals gave testimony in support of the proposed standard with modifications proposed by the framers. Since their testimony in support was substantially similar in nature, their names are tabulated below:

Name:	Title:	Affiliation:
Bruce Wick	owner	Wick Risk Management
Joe Bunker	president	B & B Framing
Larry McCune	principal safety engineer	Division of Occupational Safety and Health
Greg Minor	president	Greg Minor Construction Inc.
Delane Rhodes	president	Central Valley Framers, c/o Erickson Carpentry Contracting
Gordon Tippell	chairman	Courage Safety Systems
Darin Wallace		Production Framing Systems

Comments:

The forenamed expressed support for the proposal with minor modifications proposed by a coalition of framers and referred to as "The Framing Industry Consensus Amendments." They expressed concerns about delaying the rulemaking to gather and study data as suggested by Board member Harrison. They believe the existing standards are ambiguous and that the proposal would clarify requirements and thus create a safer working environment. Mr. Tippell commented that previous attempts to get scientific data have been unsuccessful. He also noted that the proposal would only affect framers and not any other trade.

Response:

Recommendations of the "Framing Industry Consensus Amendments" have been considered and most have been incorporated in the modified proposal (see response to written comments from the framing industry, comment nos. 1-6). The board is of the opinion that the proposal represents a comprehensive approach to residential fall protection, taking fall injury severity into consideration and prescribing work procedures to reduce fall risk. The board believes that the proposal would provide safety at least as

effective as that required by the federal CFR, thus the board accepts the commenters' remarks and thanks them for their support for the proposal.

Kevin Bland, general counsel for California Framing Contractors Association, c/o Andrade & Associates.

Comment No. 1:

Mr. Bland stated that the proposal has been in development for two years and that immediate action is needed. He also stated that the changes the framers have proposed are minor administrative changes that should not delay the adoption of the proposal.

Response:

The board has received the results of a literature search (see response to Board member Harrison's comment no. 2, above). Based on evaluation of the information provided, and the nature of the modifications proposed, the board determined it necessary to issue a 15-day notice of proposed modifications.

Comment No. 2:

Mr. Bland stated that the 15-foot trigger height is not a change to the standard.

Response:

The board agrees that the 15-foot trigger height is already prescribed by sections 1669 and 1637 which are applicable to residential-type framing and that it is not a change to the standards.

Comment No. 3:

In response to Board member Harrison's question regarding a picture of an employee walking a top plate, Mr. Bland stated that the picture was of a single story wall and he did not want Board member Harrison to get the wrong impression. Mr. Bland stated that if Board member Harrison were to go to a construction jobsite, he would only see workers on either an eight or nine foot wall or an eighteen or twenty foot wall. If the employee were on an eighteen or twenty foot wall, fall protection would be required by the proposal.

Response:

The board staff understands that although walking the top plate without fall protection is permitted by section 1669(a) up to 15 feet, the reality is that single story walls are rarely taller than 10 feet. Thus fall protection would be required by the proposed standard for any work on top plates two stories and higher.

The board thanks Mr. Bland for his participation in the board's rulemaking process.

Liz Arioto, board member.

Comment:

Board member Arioto inquired whether staff had any residential construction fall statistics.

Response:

A study performed by Marion Gillen, RN, MPH, PhD, et al., titled: "Injury Severity Associated with Nonfatal Construction Falls," published in the American Journal of Industrial Medicine, 32:647-6555 (1997) was provided to committee members with the invitation mail-out package. This study was not specific for residential construction fall injuries, and was based on a limited sampling of 255 adult construction workers who sustained nonfatal falls reported to the California Department of Industrial

Relations over a five-month time period. The committee consensus was that the data was of limited usefulness since it was not sufficiently specific to residential framing.

Subsequent to the November 2003 public hearing, Board member Harrison arranged for the Occupational Health Branch to perform a literature search on fall injury severity. The results of that study have been presented to the board as the OHB study: "Results of literature review: Falls from Elevation in Construction" performed by Ms. Florence Reinisch, M.P.H., Research Scientist II, California Department of Health Services, Occupational Health Branch. The results of the OHB study are discussed in the response to Board member Harrison's oral comment no. 2 and in the response to Board member Navarro's oral comment above.

The board thanks Board member Arioto for her interest in the rulemaking process.